

after 6 p. m. The flood waters in the canal began receding during the late afternoon, and by the following morning the flow had subsided to within 2 feet of the top of the banks.

The weakened condition of roofs and the breakage of thousands of windows and skylights, due to the rain, hail, and high winds of the afternoon of the 6th, together with the extraordinary downpour of rain, with wind squalls, during the following night, caused a general loss, including that of the greenhouses, estimated at \$190,000.

THE DROUGHT AND HOT WEATHER OF 1911, IN KANSAS.

By S. D. FLORA, Observer, Weather Bureau.

The crop-growing season of 1911, extending from March to September, inclusive, has averaged the warmest and, with two exceptions, the driest that has been experienced in Kansas since the State weather service was established in 1887.

At practically all the stations in central and northeastern Kansas the maximum temperatures of the summer of 1911 were the highest on record and the maximum of 116° at Hugoton and Clay Center on June 25, 1911, is the highest temperature ever recorded in the State by a reliable thermometer properly exposed to the free air. The previous high temperature record in the State is 115° at Manhattan on July 9, 1860.

The average daily departure from the normal temperature for the State was +3.0°. The nearest approach to this in the past 25 years was +2.2° in 1887. The summer of 1910 was the third warmest in this period, averaging 1.9° above the normal.

The drought that prevailed during the crop season of 1911 was really a continuation of the general deficiency

in precipitation which began in 1910. The latter year was the fourth driest in 25 years, taking the average of the State as a whole, and the precipitation was below the normal in all parts of the State, except in a few counties in the lower Kansas Valley. In some south-central and northwestern counties less than half the normal amount of precipitation was received that year. This general drought was relieved by the wettest February on record in the State.

The deficiency in precipitation from March 1 to September 30, 1911, has been surpassed by that of but 2 previous crop-growing seasons—those of 1890 and 1894. The average precipitation for the State for these 7 months was 16.76 inches, 72 per cent of the normal amount. The State average for 1890 was 15.10 inches and for 1894 it was 16.33 inches. The deficiency in precipitation during 1911 prevailed in all parts of the State, excepting five widely scattered counties. In some of the western counties less than half the normal amount of precipitation fell from March 1 to September 30. The station reporting the least precipitation was Lakin in the Arkansas Valley in the second tier of counties from the Colorado line. This station received but 4.76 inches during the 7 months.

In the southeastern quarter of the State, where the drought of 1910 was most severe, from 17 to 33 inches of rain fell during the crop-growing season of 1911.

Only a comparatively few stations have records available for comparing the drought of 1911 with other dry seasons that have occurred in the State previous to 1887, but these clearly indicate that drier weather prevailed in northeastern and central Kansas during the summers of 1843, 1860, 1864, and 1874, though at Wallace, in extreme western Kansas, no drier summer has occurred since weather records were begun there in 1870.